

XXII.—*An Ornithological Expedition to the White Nile.*

By HARRY F. WITHERBY, F.Z.S.

WITH the object of making a collection of birds in the district of the White Nile near Khartum, I set out from England on the last day of February, 1900.

At Marseilles I joined my two taxidermists, Messrs. E. H. Saunders and C. F. Camburn, both of whom had already done excellent work in Mr. H. J. Mackinder's expedition to Mount Kenia.

We reached Cairo on March 6th, and our time being very limited, a stay of three days had to suffice for collecting provisions, ammunition, and much necessary information.

The journey from Cairo to Khartum is already so well known, even under the new conditions of the desert railway, that but the briefest description of it is necessary. After twenty-four hours' easy railway travelling we arrived at Assuan, and from Shellal, just above the Cataract, we proceeded by a stern-wheeler to Wady Halfa.

Owing to its being rather late in the season, as well as to the extraordinary low Nile of 1900, this part of the journey was, although comfortable, rather tedious. However, after four days' battling with sandbanks we arrived at Halfa. (On our return we travelled from Halfa to Assuan in three days, but we then had the stream in our favour.) From Halfa we took the last tourist train of the season to Halfya, opposite Khartum. This is most comfortable, and is provided with sleeping- and dining-cars and a restaurateur, who furnishes excellent fare. The heat and dust were at first certainly annoying, but we soon got accustomed to such discomforts, and indeed it is surprising how little dust enters the carriages, since very nearly all the country between Halfa and Abu Hamed might, so to speak, be put through an hourglass.

After Abu Hamed, a few dôm-palms and a thin mimosa-scrub are all that grace the sand.

From Halfa to Halfya by rail is 576 miles. Going up by tourist train this occupied, including stoppages for meals,

34 hours. But coming down in an ordinary train with fewer and shorter stoppages the journey was accomplished in 29 hours—excellent time on a line of 3 feet 6 inches gauge. At Halfya we found a steamer to convey us to Omdurman. At the time of our visit all the government offices, excepting the Sirdar's Palace, were at that place, but a move to Khartum is, I believe, very shortly to be effected. Many government buildings, besides private houses and an hotel, were in process of building at Khartum. We were the recipients of the greatest possible kindness and courtesy from everyone whose aid we sought. The Sirdar, Sir F. Reginald Wingate, granted us permission to travel up the east bank of the White Nile, the west bank at that time being considered unsafe, and, through the agency of Bimbashi F. C. Newall of the Intelligence Department at Omdurman, had most kindly hired camels for us. With the generous help and advice of other officers I was enabled to complete my arrangements quickly, so that on March 21st we started away fully equipped up the White Nile.

I decided to work a small portion of the country thoroughly, and not to attempt merely to "cover ground."

Time and fatigue might have been saved if we had travelled by a steamer up the river, and worked back by land from a given point. However, we adopted the plan of going altogether by land, the object being to get such an idea of the country on our journey up as would enable us to fix upon likely places for camps, and to roughly estimate how many days should be spent in each place on our way back. This plan was so far successful that while thoroughly working the country from our southernmost point to Khartum, we were able to get back to England on June 3rd, or within a day or two of the prearranged time.

Our baggage was carried by camels, and as horses were exceedingly difficult to obtain in Omdurman, we rode donkeys. The Soudan donkey is a miserable beast compared with the Egyptian animal, and the wooden native saddle did not altogether make it a success as a mount.

Camels, though more expensive in every way, would

perhaps have been a greater success; but I am convinced that it would have been perfectly practicable, and of course much more comfortable and less fatiguing, to have ridden bicycles on the desert track as far as we went. However, by means of camels and donkeys travelling at about 18 miles a day, we reached a point a few miles south of El Kawa, or about 150 miles direct from Khartum, in nine days. We had intended to reach Abba Island a little further south, but as I was unfortunately attacked with dysentery on the tenth day from Khartum, we halted and made our first collecting-camp.

During my illness, Saunders and Camburn worked zealously at collecting both birds and small mammals at this camp and a second north of El Kawa. At our third, a little north of Ed Duem, I was able to join again in active work. From this point to Khartum we made five collecting-camps. From four to six days spent at each place was all that was needed to work out the surrounding country. Although certain species, as for instance Pigeons and Sand-Grouse, were exceedingly numerous, birds on the whole were so scarce that it was only by the hardest work that two of us who were collecting could keep the third employed in skinning. Of mammals there were scarcely any.

As we found it, in the months of April and May, the east bank of the White Nile from Khartum to 150 miles south of it is exceedingly barren. By the river there is either a strip of short grass or a flat of caked mud deeply cracked in every direction. The country beyond is sometimes abruptly cut off from the river by a high bank of sand, but more often the land gradually rises and supports a narrow belt of trees at no great distance. The trees are small, and almost all are of the acacia family. Beyond this belt, which in no place is more than a mile wide, stretches a scrub of mimosa and other bushes, gradually thinning out until the bare desert is reached. Enormous stretches of it appear to be capable of cultivation, and part of it was covered with stubble of maize and durrha—the first crop that had been grown for many years, we were told. The natives had

objected to growing corn for the benefit of their former lord and master the Khalifa.

Owing to the very large amount of land that has gone out of cultivation, and to the time of our visit—the height of the driest of dry seasons—there was very little vegetation. The trees were mostly leafless, the grass was brown and dead, while the crops consisted of little more than a patch of beans here and there or a little cotton. In fact, this period of the year, although the hottest, might be termed the winter in the Soudan. Consequently very few birds were breeding, and notwithstanding many enquiries from Europeans and natives, I was unable to discover when the general breeding-season began. If there is one at all, it is probably after the heavy rains, which commence about the end of June. The river then rises and eventually floods miles of land on each bank. This, with the rains, must entirely alter the character of the country, and provide abundant vegetation, insect-life, and other food for birds.

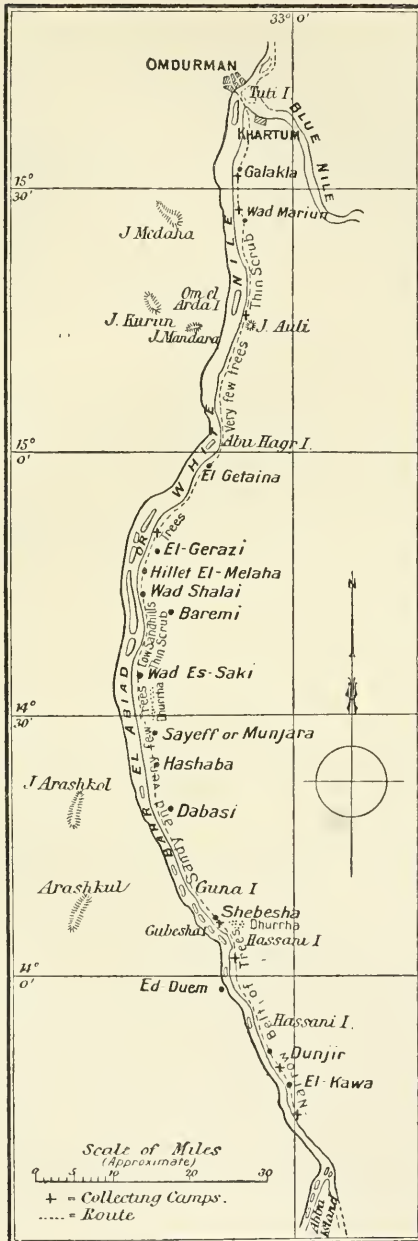
We obtained our specimens, of course, chiefly by the river and amongst the trees and thick bushes. The scrub beyond the belt was rarely dense and seldom contained many birds, while in the desert country still further from the river Sand-Grouse were almost the only species to be found.

Except by their inveterate laziness and decided independence, the natives of these parts gave us little trouble. Neither did they give us any help. They appeared to be singularly unobservant, and to take no notice of the birds and other wild animals around them.

The greatest enemy to collecting was found in the temperature. At Omdurman during April and May the maximum ranged from 100° to 115° Fahrenheit during the day, as registered by thermometers in a screen in the doctors' compound. Besides damaging ammunition, provisions, photographic materials, and so forth, this great heat caused birds to go rotten in three or four hours during the day, while it was never safe to keep anything shot overnight to be skinned in the morning.

Sandstorms were frequent; and collecting or skinning while a sandstorm is raging is hardly possible.

Fig. 28.



MAP OF THE WHITE NILE,
to show Mr. Witherby's route and camps.

As already observed, our time was limited, hence very few large birds were collected, our energies being devoted to diligently searching for smaller and, as we hoped, rarer kinds. How far this hope was justified must be decided by an examination of the following list.

In the preparation of it and in the working out of my collection I am greatly indebted to Mr. Ernst Hartert for most valuable help and advice, for which my heartiest thanks are rendered.

The places mentioned in the list of birds which follows are situated as below:—

Wad Mariun, on the east bank of the White Nile, about 12 miles south of Khartum.

Jebel Auli, on the east bank of the White Nile, about 25 miles south of Khartum.

El Gerazi, on the east bank of the White Nile, about 60 miles south of Khartum.

Shebesha, on the east bank of the White Nile, about 113 miles south of Khartum.

Ed Duem, on the west bank of the White Nile, about 120 miles south of Khartum.

El Kawa, on the east bank of the White Nile, about 140 miles south of Khartum.

The sketch-map (p. 241) will give some idea of our route, which was practically the same in going up and coming down the river. The crosses indicate approximately the positions of our collecting-camps.

Note.—No skins were preserved of those birds which are marked with an asterisk in the following list.

1. *NECTARINIA METALLICA* Licht.

These charming little Sun-birds were met with from Kawa to Khartum, but were certainly more common in the northern portion of our route. They were generally to be found in small parties searching busily for insects in the sont-trees (*Acacia* sp.). Exceedingly restless, they are continually flirting their tails and agitating their wings to an accompaniment of soft, but singularly commanding, notes. They

often hover in the air in preference to perching, when picking some insect off a tree. All the males we obtained, except one, were in various stages of transition from the immature to the mature plumage. A single specimen is greenish grey on the upperside, like the female, but with one or two metallic feathers showing. The centre of the throat is green, but the sides are still yellow. One long tail-feather of this specimen is nearly full-grown, and the white is already abraded; whereas in other examples with but few immature feathers left the central tail-feathers are scarcely longer than the others, and are tipped with white.

Adult and young. Iris dark brown; bill, legs, and feet black.

2. NECTARINIA PULCHELLA (Linn.).

This beautiful Sun-bird was even more common than the preceding species. In habits it is very similar.

Here, again, my specimens are in the transition plumage well described by Dr. Gadow in the *Cat. B. Brit. Mus.* ix. p. 8.

Young. Iris dark brown; bill, legs, and feet black.

3. ÆGITHALUS PUNCTIFRONS.

Ægithalus punctifrons, Sundev. *Oefvers. Vet.-Akad.* 1850, p. 129.

Ægithalus punctifrons has been treated by Dr. Gadow (*Cat. B. Brit. Mus.* viii. p. 70) as a synonym of *Ægithalus capensis*. A comparison of the two birds shows them to be perfectly distinct. *Æ. punctifrons* differs from *Æ. capensis* in being grey on the underparts instead of sulphur-yellow, greenish on the crown instead of grey, and grey on the rump and upper tail-coverts instead of yellowish.

Sennaar is given by Sundevall as the habitat of *Æ. punctifrons*. On the White Nile we observed very few of these birds, and only at two camps—Gerazi and Shebesha, between 60 and 120 miles south of Khartum. They were generally in pairs, and occasionally in company with parties of Sun-birds. Their sprightly and energetic actions—hopping, flitting, and climbing about the trees—in their search for

insects were quite Tit-like ; but, unlike our Tits, they were silent, we did not hear them utter a note.

Adult. Iris dark brown ; bill bluish at base, darkening to brown at tip ; legs and feet bluish slate-colour.

4. MOTACILLA FLAVA Linn.

This was the only Wagtail we saw. It was common on all the grassy flats by the river during our journey south. The latest note I have is of one shot on April 11th at Kawa.

Adult. Iris brown ; bill dark brown ; legs and feet black.

5. ANTHUS CAMPESTRIS (Linn.).

The Tawny Pipit was fairly common from Kawa to Khartum during the whole of our journey. The last we obtained was on May 12th near Khartum. They were to be found as frequently on the sand amongst the scrub as in company with Wagtails on the banks of the river.

Adult. Iris brown ; bill brown ; legs and feet pale brown.

6. ANTHUS CERVINUS (Pall.).

Only one Red-throated Pipit, which I shot near Khartum on so late a date as May 12, was observed.

Adult. Iris hazel ; bill dark brown ; legs and feet brown.

7. GALERIDA FLAVA Brehm.

Galerita flava A. E. Brehm, J. f. O. 1854, p. 77.

My specimens agree perfectly with the typical specimens of *G. flava* in the Tring Museum, collected by Brehm in the Khartum district.

A specimen in immature plumage is lighter and much more rufous on the upper parts than the mature bird, and the feathers of the head and mantle are tipped with buffish white, while the wing-coverts and the inner secondaries are broadly margined with the same colour.

These Crested Larks were very common and tame in the cultivated districts near Khartum. As we proceeded south, the birds became scarcer and wilder. At Shebesha, about 100 miles south of Khartum, only a pair here and there was to be met with, not on the cultivated land near the river, but amongst low thorn-bushes where the scrub ended

and the desert began. They are very fond of squatting in the shade of a bush, from which they run at the slightest alarm and suddenly take to flight. Every mature bird we obtained was in full moult.

Adult. Iris brown; bill horn-colour; legs and feet pale straw-colour.

8. *PYRRHULAUDA MELANAUCHEN* (Cab.).

Individuals of this species were plentiful. Along the river-bank wherever there was a grassy flat they were generally to be found in small companies. They were also common amongst the bushes in the sand, where, like the Crested Larks, they took advantage of the shade of some bush, under which they crouched five or six together. They allowed of a near approach, and then almost invariably took a short flight to the shade of some other bush. In sandy country, even when flying, the female is difficult to see, and is soon lost sight of, but the male with his black breast and almost white back is much more conspicuous.

Adult. Iris dark brown; bill bluish white; legs and feet greenish white.

9. *PYRRHULAUDA LEUCOTIS* (Stanl.).

The young bird, of which we obtained two specimens, is much like the female, but is greyer on the upper parts, showing little rufous colour except on the wing-coverts. The dark centres of the feathers of the back are more marked and the tail-feathers are broadly margined with buff. The under parts resemble those of the female. In habits this species seemed to be identical with the last mentioned, with which it associated. It did not, however, appear to be so numerous. We saw several of them in immature plumage. On May 11th we found a nest of this species in a small scooped-out hollow in the caked mud amongst some very short burnt-up grass near the river. The nest, which was sheltered by a large lump of mud, was a small shallow "cup" composed of dry grass and two or three bits of cotton. Round the "cup" was a compact and neatly-arranged layer of particles of mud, perhaps made by the bird during the

formation of the hollow in the caked ground. The nest contained one egg, from which the female flew on our approach.

Adult. Iris dark brown; bill bluish white; legs and feet dull flesh-colour.

10. *EMBERIZA FLAVIGASTRA* Rüpp.

An examination of the fine series of *Emberiza flaviventris* in the British Museum makes it evident that the South-African bird can easily be separated from its more northern representative, the *Emberiza flavigastrea* of Rüppell. In the South-African bird the rich orange-buff of the upper breast is more extensive and very much richer in tone than in the northern bird, while the yellow on the lower part of the breast of *E. flaviventris* extends down the sides, whereas in *E. flavigastrea* it is confined to a medial line on the belly, the sides and flanks being white up to the middle of the breast. In fact, the breast of *Emberiza flavigastrea* is very much like that of *Emberiza poliopleura*. We saw only one specimen of this bird, which was obtained at Kawa.

Adult. Iris hazel; bill, upper mandible horn-colour, lower mandible pale brownish; legs and feet pale brown.

11. *PASSER RUFIDORSALIS* Brehm.

The House-Sparrows of Khartum and the White Nile were considered by Brehm to be worthy of specific distinction. A search through the series of *Passer domesticus* at the British Museum failed to discover any bird approaching my specimens from the White Nile for smallness of size and richness and brightness of colouring, while those from Khartum (A. Brehm coll.) and from Lado (Emin Pasha coll.) at Tring agree perfectly with my birds. The wing of the male of *Passer rufidorsalis* measures only $2\frac{3}{4}$ inches. When first I saw these Sparrows at Omdurman I was at once struck by their very fine colouring.

12. *PASSER DIFFUSUS* (Smith).

We found this Sparrow here and there from Kawa to near Khartum, but it was nowhere plentiful and seemed to

prefer thick wood, of which there was but little. The only note we heard it utter was a single piping sound.

Adult. Iris brown; bill blackish brown, lower mandible yellowish at base; legs and feet dark olive-green.

13. PASSER LUTEUS (Licht.).

This species was common and well distributed. Generally to be found in small flocks of twenty or so, it was very wild and frequented the bushes and trees in the more open country. When flying it has a twittering linnet-like note, while in the trees it chirps like a House-Sparrow. We saw an enormous flock of these birds in some tall bushes on the river-bank near Kawa. They were exceedingly restless, rising in clouds from the bushes as we approached and settling again further on, only to rise when we neared them.

Adult. Iris bright hazel; bill horn-colour, becoming dark at tip; legs and feet pale brown.

14. SERINUS LEUCOPYGIUS (Sundev.).

We only met with this species twice: at Shebesha, about 90 miles south of Khartum, and in some acacias near the river at Wad Mariun, within 12 miles of Khartum.

Adult. Iris hazel; bill horn-colour; legs and feet flesh-colour.

15. PYROMELANA FRANCISCANA (Isert).

This species was only observed within a few miles of Khartum, where we found a considerable flock amongst some beans and onions near the river.

My specimens are in brown female plumage. We saw no red-and-black males.

16. ÆDEMOSYNE CANTANS (Gm.).

My birds are moulting from the immature to the mature plumage, and show the following changes:—

OLD PLUMAGE.	NEW PLUMAGE.
<i>Back and secondaries</i> faintly barred with brown.	<i>Back and secondaries</i> more strongly barred with brownish grey.
<i>Crown-feathers</i> light-tipped brown, with dark centres.	<i>Crown-feathers</i> dark brown with darker centres.

Chin-feathers buffish white.

Chin-feathers reddish brown, with white tips, giving a spotted appearance.

Upper breast and flanks buffish white.

Upper breast and flanks buffish white, strongly barred with buff.

These little birds were by no means plentiful. They were found in small parties of five or six, generally sitting close together on a twig of some bush or tree near the river. They seemed most inactive, their sole occupation consisting, apparently, of singing *sotto voce*.

Iris hazel; bill light slate-colour; legs and feet bluish pink.

17. *ESTRILDA PHENICOTIS* Swains.

We only saw this bird at our southernmost camp, where it was common.

Iris dark red; bill purple; legs and feet whitish grey.

18. *ZONOGASTRIS CITERIOR* (Strickl.).

Wherever the sount-trees were thick enough to form a wood these birds were generally to be found.

Adult. Iris light brown; bill dull red; legs and feet light brown.

19. *SITAGRA LUTEOLA* (Licht.).

Only one specimen obtained.

20. *HYPHANTORNIS GALBULA* (Rüpp.).

These Weavers were very common and to be found in every stretch of wooded or bushy country. They were generally in small flocks, and often associated with *Passer luteus*. They have a wheezing little song, sounding more like the creaking and squeaking of two small boughs rubbing together than the voice of a bird. All those that we obtained were in immature plumage.

21. *ORIOLUS GALBULA* Linn.

We obtained a pair of these birds at Shebesha on April 25th. Two or three were also observed at Gerazi on April 30th and May 1st. They were very wild.

22. LAMPROTORNIS PORPHYROPTERUS Rüpp.

Dr. Sharpe has differentiated the Central-African short-tailed bird, under the name of *L. brevicaudus*, from the longer-tailed Abyssinian form (Ibis, 1897, p. 450). My specimens evidently belong to the Abyssinian species, their tails measuring: ♂ 8", ♀ 6".75, ♀ 6".87.

These birds were plentiful as far as we went south of Duem, but we did not observe them more than ten miles north of that place. Their song is sweet, but they have a perpetual and irritating call-note which is decidedly harsh. We found them in small companies, generally frequenting the tops of the trees; they were very tame.

Adult. Iris pale yellow; bill, legs, and feet black.

23. SPREO PULCHER (P. L. S. Müll.).

We only observed these birds near Gerazi and Getaina, between 50 and 60 miles south of Khartum. They were in companies of from six to eight in thick bush. Although very conspicuous, looking dark when perched, and showing a whitish wing-patch when flying, they are nevertheless difficult to shoot owing to their exceedingly shy and crafty nature. When four or five are in a tree, one of them is almost always perched upon the top of it or upon some outside branch, where he can get a good view. Just as you arrive within gunshot, the sentinel gives a warning whistle, so shrill that it sounds almost like a squeak, at which all the flock take a short straight flight to another tree. You creep up again, but the sentinel seems to know the exact range of your gun, as do so many birds. When feeding on the ground, this species is more easily approached, and its gait and action are similar to those of our Starling.

Adult. Iris white; bill, legs, and feet black.

24. CORVUS SCAPULATUS Daud.

These Crows were at most points common and tame. They were generally in fairly large flocks, but we saw many pairs and a good many single birds. They make a very hoarse "quaa" rather than a "kaa."

Adult. Iris hazel; bill, legs, and feet black.

25. *CORVUS UMBRINUS (Sundev.).

Ravens were seen here and there either singly or in pairs. On the desert railway from Wady Halfa to Abu Hamed there was a Raven or two at every "station." These, and very rarely a Kite, were the only birds to be seen.

The river is a great distance from some of the stations, and it is puzzling to discover where the Ravens drink unless they take their chance at some bucket or tank.

26. BUCHANGA AFRA (Licht.).

This species was by no means common, but one or two individuals were observed at most points. When the bird is flying overhead or towards the observer, the light grey underside of the primaries shows up conspicuously. It has a peculiar low squeaking little song.

Adult. Iris bright red; bill, legs, and feet black.

27. LANIUS SENATOR Linn.

Mr. Hartert has lately (*Novitates Zoologicae*, vol. vi. December 1899, pp. 416-418) separated this species into four subspecies. My bird agrees with subspecies *d* (*Lanius senator paradoxus* A. E. Brehm) in having the central rectrices pure white at the base.

We only saw one of these birds. This was obtained near Khartum, and it was very wild. When flying away, the white rump at once distinguishes it from *Lanius nubicus*, which it much resembles at a distance, the red head being inconspicuous except at close quarters.

Adult. Iris hazel; bill, legs, and feet black.

28. LANIUS NUBICUS Licht.

This Shrike was everywhere common. It was plentiful on May 16th at our last camp near Khartum, and we observed a pair at Korosko on May 23rd. We obtained an immature male on April 8th at Kawa. To me these birds had every appearance of being residents and not migrants. They haunted the same trees day after day, and always seemed thoroughly at home. They showed no sign of nesting, but were continually chasing one another as though mating. The call on these occasions is a harsh, rapidly-uttered "keer,

keer, keer"—a complaining and almost squealing note. They almost invariably perch on a low bough, from which they every now and then dart to the ground, to seize and devour some insect, and then return to their point of observation. They also capture insects in the air and pick them from the tree.

Adult. Iris dark brown; bill dark horn-colour; legs and feet black.

Young. Iris, bill, legs, and feet dark brown.

29. *LANIUS ISABELLINUS* Ehrenb.

A pair of these birds was obtained near Kawa on April 8th. We observed them nowhere else.

Adult. Iris dark brown; bill whitish at base, tip black; legs and feet black.

30. *LANIUS DEALBATUS* de Filippi.

Lanius dealbatus de Filippi, *Revue et Mag. Zool.* 1853, p. 289.

Lanius leuconotus Brehm, *Journal für Orn.* 1854, p. 147.

My specimens agree perfectly with the type of Brehm's *L. leuconotus* at Tring, as well as with the co-type of *L. dealbatus* in the British Museum. This species was nowhere common, but it was met with at most of our camping-places. We once saw a pair, but the birds were generally met with singly and were rather wild.

Adult. Iris dark brown; bill dark slate-colour; legs and feet blackish brown.

31. *NILAUS AFER* (Lath.).

We only observed this bird between Jebel Auli and Gerazi, from 25 to 60 miles south of Khartum. In that district it was not uncommon. This was one of the few species found breeding. The sexual organs in the specimens preserved were in an advanced condition, and I watched a pair building a nest on May 1st. It was placed in the fork of a horizontal bough about 30 feet up a sont-tree in a thick wood. Both birds worked at building, bringing material at intervals of a minute, and often less, during the considerable time I watched them. They invariably sat in the nest and

turned rapidly round in it as they built in the stuff which they had brought. I saw one of the birds plastering cobwebs on the outside. The male, and possibly the female also, has a quiet piping note of one syllable.

Adult. Iris dark brown; bill black, with base of lower mandible pale slate-colour; legs and feet bluish grey.

32. LANIARIUS ERYTHROGASTER (Cretzschm.).

We only saw four birds of this species, though it is not likely to escape observation. Two were seen at Kawa and two at Shebesha.

Adult. Iris pale straw-colour; bill black; legs and feet dark slate-colour.

33. TELEPHONUS REMIGIALIS Hartl. et Finsch.

This seemed to be a species of local distribution. We only observed it between Shebesha and Gerazi, where it was not uncommon. The actions of this bird are beautiful and fascinating. It leaves a tree with a downward swoop, then glides gently up with tail and wings outspread, singing sweetly as it rises.

It is rather shy, hiding itself on the further side of the bush or tree as soon as it catches sight of an intruder.

Adult. Iris mauve; bill black; legs and feet olive-green.

34. ARGYA ACACIÆ (Licht.).

A few of these birds were frequenting some thick bush near Gerazi, south of which we did not observe them. They were more common nearer Khartum, where, some four or five miles from the river, companies of six or seven inhabited scattered thorn-bushes in the wastes. They shared the desert with the Sand-Grouse, the only other bird to be seen so far from the river as this, unless it was an occasional Pigeon. This Babbler is as often seen on the ground as in a bush, and its tracks, with those of Sand-Grouse, were everywhere plainly impressed upon the hard soil. It is a shy bird, and knows well how to keep its distance, running rapidly along the sand and then taking a short flight, low and straight. The alarm-note is a fairly loud and very shrill "whce," very rapidly uttered some four or five times.

It also has a shrill single cry, which I took to be the call-note. When perched, it continually flirts its tail up and down, like a Wagtail, but with a sharper motion.

Sometimes the bird will hide in a thick bush and allow you to approach it. But on these occasions it always keeps well to the further part of the bush, moving round as you do the same, and then suddenly darting out at the opposite side, so that it is generally well out of range before you know it has left the cover. You may kick or beat the bush, but nothing will move it until it decides to leave, which is almost sure to happen when your attention is occupied by a thorn.

Adult. Iris light brown; bill dull yellow; legs and feet pale green.

35. CRATEROPUS LEUCOCEPHALUS (Cretzschm.).

These birds were common wherever the bush was thick.

They are always to be found in pairs or in small companies of five or six, and, although most amusing to watch, are exceedingly annoying. The slightest thing seems to frighten them, whereupon their alarm takes a curious turn. They do not fly sensibly away, but persistently follow the intruder about and hurl at him a continual stream of the most maddening, rattling alarm-notes. This noise is made up of a long string of "churrs," lasting for half a minute or so at a time, and so rapidly are the notes repeated that the whole sounds much like a policeman's rattle turned with feverish anxiety. Moreover, the birds perform in company, sitting on a bough side by side and touching one another. Should the collector be so unlucky as to rouse five or six of them to their highest pitch of wrathful terror, he may give up all hope of collecting in that neighbourhood for some time. Luckily they are conspicuous birds, and so may be easily seen and avoided.

Adult. Iris bright yellow; bill black; legs and feet greenish grey.

36. PYCNONOTUS ARSINOE (Hempr. et Ehr.).

This Bulbul was everywhere exceedingly common, and we were never without one or two of them in the trees over our

camping-place. They were most confiding, and the first species to come down to the tin of water we always put out for the birds near our tents. Their cheery flute-like notes, almost exactly syllabled by the words "tit-willow," although heard on all sides continually, never became wearisome.

Adult. Iris hazel; bill, legs, and feet black.

37. *EREMOMELA GRISEO-FLAVA* (Heugl.).

My specimens of this beautiful little bird agree with the two examples in the British Museum collected respectively by Heuglin and by Blanford in Abyssinia. I may point out that in Heuglin's figure (*Orn. N.-O. Afr.* vol. i. tab. xi.) the rump is wrongly coloured yellow. The artist has evidently been led astray by the yellow feathers of the flanks having curled over the rump, as they often do in a skin. In Blanford's figure (*Geol. & Zool. Abyss.* p. 355, pl. iii. fig. 1) the rump is correctly coloured brown.

We obtained only two examples of this species, both at Shebesha, the only place where we saw it. With so slight an acquaintance with these birds it is not possible to say much of their habits. But I was particularly struck, in watching two of them for some time, by their elegant movements and great activity in the heat of the day. They were hunting for insects in a small sount-tree, and took not the slightest notice of me, although I was standing only five yards away. The foliage was searched so diligently and minutely that I could scarcely believe that any living thing could be left for the next-comer. Small as the tree was, the birds seemed to be in great fear of losing each other, and were continually uttering a soft call-note.

Adult. Iris yellowish brown; bill greenish pink; legs and feet greenish.

38. *CAMAROPTERA BREVICAUDATA* (Cretzschm.).

My specimens seem to be in immature plumage, being very light-coloured on the breast and throat, and showing none of the ashy-grey colouring of the mature bird on the under parts.

This species was rare. We only observed it at Shebesha, where we obtained two examples.

Iris brown; bill black above, horn-colour below; legs and feet dull flesh-colour.

39. SYLVIELLA BRACHYURA.

Sylvietta brachyura Lafr. Rev. Zool. 1839, p. 258.

Sylviella micrura Sharpe, Cat. B. Brit. Mus. vii. p. 154 (1883) (specimens *a, b, c*).

Sylviella brachyura Grant, Ibis, 1900, p. 155.

My specimens agree perfectly with the western form as separated by Mr. Ogilvie Grant (Ibis, 1900, p. 155) under the name of *S. brachyura*. The throat and eyebrows in this form are rust-coloured, while in its more eastern representative, *S. micrura*, those parts are whitish.

We only found this species at three camps, viz. Duem, Shebesha, and Gerazi; at none of these places was it at all common. Both in habits and note it reminded me very much of our Nuthatch. The call-note is, in fact, a very weak reproduction of that of the bird mentioned. Although I never saw it climb up the trunk of a tree, it was always to be found running about the boughs and twigs, and often hanging on the underside of a branch, in its diligent search for insects. The general colour and the short tail no doubt add somewhat to its superficial likeness to a Nuthatch, although a miniature copy.

Iris hazel; bill dark brown; legs and feet light brown.

40. SPILOPTILA CLAMANS (Temm.).

Spiloptila clamans, Sharpe, Cat. B. Brit. Mus. vii. p. 231.

These beautiful little birds were met with at three of our camping-places, viz. Shebesha, Gerazi, and Jebel Auli. They were in little parties of five or six, and first attracted my attention by their low sweet call-notes, which immediately arrest the listener by their purity and extreme delicacy. They have also a pretty little warbling song, which requires a near hearing and perfect silence to be fully appreciated. Low thick thorn-bushes at the edge of the desert seemed to be their favourite hunting-ground, but they also frequented the acacias on the outskirts of the woods, and were sometimes to be seen hopping about on the sand. They are seldom at rest, and are continually jerking their tails from side to side.

Adult. Iris dark yellow; bill flesh-colour at base, tip black; legs and feet yellowish pink.

41. *CISTICOLA ARIDULA.*

Cisticola aridula Witherby, Bull. B. O. C. vol. xi. p. 13 (1900).

This species differs from *C. hindii*, which seems to be its nearest ally, chiefly in its small size and the colour of its upper parts, which are light buff, the feathers being very narrowly streaked with dark brown mesially. Besides having no subterminal bars to the tail-feathers, it differs from *C. cisticola* in its smaller size, in the absence of any rufous tinge on the rump, upper and under tail-coverts, and flanks, and in the colour of the upper parts, already described. It has been suggested to me that this bird might be an albinism, though I do not know of what species it could be an albino. As it inhabits a desert country, I see no more reason for assuming that this sandy-coloured *Cisticola* should be an albinism than that Crested Larks and other desert-coloured birds from the same locality are so, although, unfortunately, I procured only one specimen of my new bird.

Adult male. Iris greenish straw-colour; bill flesh-colour; legs and feet yellowish flesh-colour. Total length about 3.75 inches, culmen 0.44, wing 1.75, tail 1.4, tarsus 0.68.

I found two of these birds in some long brown grass near Gerazi, about 60 miles south of Khartum, on the White Nile. Unfortunately I was only able to obtain one. These were the only *Cisticolæ* seen during the trip.

42. *CERCOTRICHAS PODOBE* (P. L. S. Müll.).

Wherever there were trees some of these birds were almost sure to be found frequenting them, so that, even if not very numerous, they were at all events well distributed over the whole district. Like the Rufous Warbler, they have a habit of cocking their tails at right angles to the body and spreading them out, seemingly to show off the white spots. They have a short but mellow song made up of 6 or 7 piping notes. I noticed three varieties of this song, all uttered at intervals by the same bird. The alarm-note is an unmusical

tick-tick-tick. When the bird is flying the wings appear conspicuously brown.

Adult. Iris brown; bill black; legs and feet dark brown.

43. *ACROCEPHALUS PALUSTRIS* (Bechst.).

We obtained only one Marsh-Warbler, at Shebesha on April 23rd.

Adult. Iris light hazel; bill horn-colour; legs and feet yellowish brown.

44. *ACROCEPHALUS STREPERUS* (Vicill.).

The only Reed-Warbler recognised was obtained at Kawa on April 11th.

Adult. Iris light hazel; bill, upper mandible black, lower yellowish; legs and feet dark brown.

45. *HYPOLAIS PALLIDA* (Hempr. et Ehr.).

This species was everywhere exceedingly common, from our first to our last camp. Its sharp "chack-chack" call-note and its short, rather rasping song resounded from every tree.

This Warbler and the Lesser Whitethroats, which also swarmed, were a great nuisance to the collector. A thick bushy tree often contained 20 or 30 of these restless little birds. They were too tame to be driven out of it, while to make sure that none of them were of any other species was a tedious and sometimes impossible task. We never saw them in pairs, and there was no sign of their breeding or intending to breed in the district.

Adult. Iris hazel; bill brown; legs and feet pale brown.

46. *PHYLLOSCOPUS TROCHILUS* (Linn.).

We saw and obtained the Willow-Warbler at Kawa on April 11th and at Shebesha on April 22nd.

Adult. Iris hazel; bill, legs, and feet brown.

47. *PHYLLOSCOPUS RUFUS* (Bechst.).

The only Chiffchaff identified was one obtained on May 1st at Gerazi.

Adult. Iris hazel; bill brown; legs and feet dark brown.

48. *SYLVIA NISORIA* (Bechst.).

A few Barred Warblers were seen, the latest being at Gerazi on May 1st, while one was obtained at Shebesha on April 23rd, and another at Kawa on April 12th.

Adult. Iris pale yellow; bill brown; legs and feet greenish grey.

49. *SYLVIA CURRUCA* (Linn.).

The Lesser Whitethroat was even more numerous than *Hypolais pallida*.

It was quite the exception to find a tree by the river without some of these birds. In fact, they may be said to have swarmed between Kawa and Khartum from the 30th of March to the 16th of May, their numbers on the last date being, to all appearance, just as great as on the first. They were exceedingly fearless. When I was lying ill in camp one became so tame that it lived half the day in my tent. It came for water. Although the river was very near, when I splashed in the water in a bucket by my side the bird would hop on to my arm or the bed, and then when I drew my hand out it would without hesitation suck the drops off my fingertips. This became a regular pastime for me, and I suppose a pleasure for the Whitethroat, all through the heat of the day.

Adult. Iris pale brown; bill, legs, and feet dark slate-colour.

50. *AËDON GALACTODES* (Temm.).

Rufous Warblers were seen at every camp, and in some places they were quite common.

Adult. Iris pale brown; bill brown; legs and feet pale brown.

51. *RUTICILLA PHËNICURA* (Linn.).

This species was seldom observed. The last noted was a male obtained at Gerazi on May 3rd.

Adult. Iris hazel; bill, legs, and feet black.

52. *MONTICOLA SAXATILIS* (Linn.).

The only Rock-Thrush seen was obtained at Kawa on April 9th.

Adult. Iris hazel; bill, legs, and feet black.

53. SAXICOLA AURITA (Temm.).

My specimens are of the form *S. amphileuca* Hempr. et Ehr. (Symb. Phys., Aves, fol. *bb*). This Wheatear was fairly common and well distributed. It was generally met with along the river-bank.

Adult. Iris hazel; bill, legs, and feet black.

54. SAXICOLA MELANOLEUCA (Güld.).

Black-throated Wheatears appeared to be very rare, being seen at Shebesha only, where we obtained specimens on April 26th.

Adult. Iris hazel; bill, legs, and feet black.

55. TERPSIPHONE CRISTATA (Gm.).

The only bird of this species seen was an immature male obtained near Khartum on May 15.

Iris deep violet; bill violet-black; legs and feet violet.

56. CLIVICOLA RIPARIA (Linn.).

Sand-Martins were everywhere numerous up to our last day's collecting on May 16th.

Adult. Iris hazel; bill, legs, and feet black.

57. CLIVICOLA RUPESTRIS (Scop.).

The only specimen obtained or seen was a solitary bird which haunted the top of Jebel Auli.

Iris dark hazel; bill, legs, and feet black.

58. HIRUNDO RUSTICA Linn.

Swallows were not nearly so numerous as Sand-Martins. In Omdurman the former were common, and we were assured that they bred regularly in a hut in the doctors' compound.

59. CAPRIMULGUS EXIMIUS Temm.

We obtained an *adult male* of this rare and beautiful species at Wad Mariun on May 12th.

So far as I am aware, only four other specimens are known. Three of these were brought home by Rüppell, who gives Sennaar as their habitat in his 'Systematische Uebersicht.' Herr Erckel, Rüppell's collector during his second expedition, informed Mr. Hartert (see *Ibis*, 1892, p. 279) that the specimens were killed in 1823 or 1824 by Hey, Rüppell's

collector during his first voyage, probably near the Bahr el Abiad. Two of these specimens are in the Frankfort Museum and one is at Leyden. A fourth, which is in Mr. Rothschild's Museum at Tring, was obtained by Schimper or Baron Von Müller, and is labelled "Nubia" (see Hartert, 'Novitates Zoologicæ,' vol. i. p. 3). I have compared my example with that at Tring. It is considerably darker and richer in colour, but this is without doubt owing to its being a fresher specimen. There are other small differences, however, which are perhaps worth noting. My bird has on the upper back a conspicuous "saddle" of golden feathers almost devoid of the grey and black bars and spots which are characteristic of the other feathers of the upper parts. This is no doubt due, in some measure, to abrasion. The white tips to the two outer pairs of rectrices are larger, measuring on the outermost pair 38 mm. and on the inner 33 mm. The first four primaries of each wing have white patches extending right across the feathers. In the specimen at Tring these patches do not extend to the outer webs, while in the description of the typical specimen at Frankfort (Hartert, Cat. B. Brit. Mus. xvi. p. 563, 1892) only the first three primaries are mentioned as having the white patch.

Adult. Iris blackish; bill horn-colour, black at tip; legs and feet brownish flesh-colour. Wing 7·25 inches, tail 4·75, tarsus 0·9, culmen 0·5.

The *testes* were considerably enlarged, and the stomach contained a small grasshopper. Although we were always on the look-out for this species, it was not until nearly our last day that we saw and obtained, by a mere chance, this solitary specimen. My journal thus describes the capture, which in its way was somewhat romantic:—I was shooting bats just after sunset. The first that dropped I could not find, so I marked the place where it seemed to fall with a pyramid of mud. Then I went down nearly to the river's edge. The sun's glow had quickly faded, but there was a brilliant moon. I shot another bat, and was looking for it, when a bird like a hawk with a straight flight appeared like a ghost from over the river. There was only dust-shot in

the gun, but as it was night I thought the bird must be fairly near, since I could see it. So, as it passed, I fired at it. It did not drop, but flew on, and in ten yards or so was out of sight. I thought no more about it, but went on looking for the bat. Not finding it, I called to the camp, which was near, for a lantern. After further search with the light I gave the bat up. On my way back to the tents I turned off to have another look for the first bat which I had marked by a heap of mud. As I flashed the light on the place, there lay this most beautiful of Goatsuckers. After due jubilation and admiration of the prize, a proceeding which caused our men considerable surprise, Saunders and Camburn said that after I had fired a Goatsucker, probably this one's mate, had hovered round the tents, but was gone before they could get a cartridge into a gun. That night we heard a Goatsucker churring, and we imagined that it did not sound quite like *Scotornis climacurus*, the common Nightjar of the country, but the difference, if any, was so slight as to be impossible to describe.

The country for miles round this camp was singularly bare of trees, while the sand was yellow and not of the earthy colour usual in the district. From 2 to 6 miles inland from the river clumps of long grass and thorn-bushes grew in the dry soil. We tramped far and wide for two days, morning, afternoon, and evening, but never saw or heard a sign of another *C. eximius*.

60. SCOTORNIS CLIMACURUS (Vieill.).

Except at our last two camps near Khartum, this Goatsucker was seen or heard throughout the district. In crawling through a thick wood I have several times met with it asleep on the ground in the day-time. It constantly came into the trees over our tents and "churred" at all times of the night. Judging from memory, its notes are much more highly pitched, and the vibrations more rapid, than those of our Nightjar. In fact, the sound might well proceed from an enormous locust. When flying, the bird is exceedingly beautiful; it looks like a great butterfly as it suddenly rises

from the ground, gives a few rapid flaps, and then floats along on outstretched wings, displaying the striking striped plumage of the upper parts.

Adult. Iris dark brown; bill reddish brown, black at tip; legs and feet pinkish brown.

61. *CORACIAS ABYSSINICUS* Bodd.

This Roller was fairly evenly distributed in small numbers throughout the country. Solitary birds were generally seen, and very rarely a pair. They were always wild, and were very fond of perching on the tops of the acacia trees.

Adult. Iris dark brown; bill black; legs and feet yellowish slate-colour.

62. *MEROPS PUSILLUS* P. L. S. Müll.

My specimens are of the form with a blue spot behind the eye, lately separated under the subspecific name of *M. p. ocellaris* by Prof. Reichenow (see 'Ornithologische Monatsberichte,' June 1900, No. 6, p. 86). We only noticed these beautiful little Bee-eaters at two camps, viz. Kawa and Shebesha, at both of which they were fairly common. Like *Merops apiaster*, they are continually taking upward gliding flights and then returning to perch on some bough. I once saw an individual dart into the air and catch one of the large black hornets which are so common. Returning to its perch, the bird passed the insect to and fro through its beak, and having thus crushed it thoroughly, swallowed it whole.

Adult. Iris crimson; bill black; legs and feet brownish grey.

63. *MEROPS APIASTER* Linn.

We only saw one specimen, which was the last bird we collected near Khartum on May 16th.

Adult. Iris crimson; bill black; legs and feet brownish black.

64. *MEROPS VIRIDISSIMUS* Swains.

Mr. Hartert has pointed out to me that in Indian birds of this species the throat is blue, whereas in African specimens it is always green. My specimens vary considerably,

evidently owing to some change of plumage, probably from the immature to the mature state. Two have the tail-feathers fully developed and a distinct black pectoral band, while two others have no long tail-feathers and an ill-defined pectoral band, shewing scarcely any black. We found this Bee-eater at one camp only, viz. Gerazi.

It utters a soft "chee," repeated a varying number of times in succession.

Adult. Iris brown; bill black; legs and feet greyish black.

65. *MEROPS PERSICUS* Pall.

Only seen at Wad Mariun, near Khartum.

Adult. Iris crimson; bill black; legs and feet brown.

66. *UPUPA EOPS* Linn.

A few were seen at intervals throughout our journey, the latest noted being on May 13th.

Adult. Iris hazel; bill light brown at base, darkening to almost black at tip; legs and feet bluish grey.

67. *LOPHOCEROS NASUTUS* (Linn.).

A few of these Hornbills were observed between Gerazi and Wad Mariun, sometimes singly and sometimes in small parties of four or five. They were rather wild; the flight, in long sweeps up and down, is stronger and straighter than that of the next species. We found them as frequently where trees were thick as in the more open country, and they were sometimes feeding on the ground.

The note, a long drawn-out whistle ("whee-ou"), is loud and clear, and can be heard at a considerable distance.

Adult. Iris dark brown; bill and rudimentary casque black, with a creamy-white patch on the basal half of the upper mandible and three uneven whitish stripes on the lower mandible; legs and feet brownish black.

68. *LOPHOCEROS ERYTHORHYNCHUS* (Temm.).

To be seen in some places quite commonly, wherever the trees were fairly thick. They will generally allow of a near approach, although they watch the intruder carefully. The

flight is decidedly ungainly. Starting out of a tree with a rush, they rise quickly and appear to be going some distance. The pace, however, soon slackens, and the bird dips as though it were being dragged down by the weight of its bill, while it soon alights in the nearest tree. The note is rather like a shriek, with a faint suspicion of music in it.

Adult. Iris brown; bill—upper mandible dark red, yellow at base; lower mandible dark red at tip, black in middle, yellow at base; legs and feet black; naked skin round eyes purplish; bare patches on each side of throat reddish.

69. *CERYLE RUDIS* (Linn.).

The only Kingfisher we saw, and by no means numerous. At Omdurman it seemed commoner than elsewhere. A large proportion of the repeated downward swoops of this bird are unsuccessful, as far as any capture goes.

70. *COLIUS MACRURUS* (Linn.).

Colies of this species were everywhere common. They kept to the thickest trees and were always in company, four or five being generally together. When alarmed, these birds hide themselves in the densest part of a tree, through which they climb and creep. Arrived at the far side of it, they rush out, uttering a piping note, which denotes but the faintest suggestion of alarm. Much the same note, but softer and more plaintive, and uttered in a less hurried way, forms the call. The flight is fairly straight and rather heavy. On April 23rd I saw one of these birds collecting stuff in its bill, as though for building, but no nest was to be found, and the birds seemed to have finished breeding and to be in family parties.

Adult. Iris red; bill—upper mandible pinkish red, with black tip, lower mandible black; legs and feet purple; orbits bare, lake-red.

71. *CUCULUS CANORUS* Linn.

We saw a Cuckoo at Wad Mariun on May 13th, one of our last days collecting. There were a good many at Gerazi at the beginning of May, but we never heard them utter a sound. A bird that we shot was in adult plumage.

72. MELANBUCCO VIEILLOTI (Leach).

Only observed at Kawa.

Adult. Iris dark brown; bill, legs, and feet black.

73. TRACHYPHONUS MARGARITATUS (Rüpp.).

We only observed this species between Shebesha and Jebel Auli. In this district it was met with occasionally, attracting attention by its habit of sitting on the top of a tree and uttering a fine clear piping cry. It also gives vent to a loud and somewhat harsh "cheouw," which must, I think, be an alarm-note.

Adult. Iris hazel; bill dark pink; legs and feet dark slate-colour.

74. CAMPOTHERA NUBICA (Gm.).

The bills of my specimens are longer and stouter than in those from Abyssinia in the Tring collection. Although we never saw a Woodpecker's hole in any tree, the birds were not uncommon, this species being the most numerous. They have a very "bunched-up" appearance when on a trunk. On April 20th I watched two females chasing each other vigorously and calling harshly, the reason for which conduct was not apparent.

Adult. Iris bright red; bill horn-colour; legs and feet dark olive-green.

75. IYNGIPICUS OBSOLETUS (Wagl.).

Only one specimen observed. This was obtained at Gerazi on April 30th.

Adult. Iris light red; bill horn-colour; legs and feet very dark olive-green.

76. MESOPICUS GOERTAN (P. L. S. Müll.).

This species, which is much shyer than *Campothera nubica*, was uncommon, two or three being observed at Shebesha and Gerazi, and one near Jebel Auli, where there are very few trees of any size.

Adult. Iris dark brown; bill light slate-colour at base, dark at tip; legs and feet slate-colour.

77. *TURTUR COMMUNIS* Selby.

We did not observe the Common Turtle-Dove south of Gerazi, but thence northwards it was numerous. Large numbers frequented some trees within two miles of Khartum on our way up on March 21st, and there was a fairly large flock at the same spot on our return on May 15th, when we obtained specimens.

We did not observe *Turtur arenicola*.

Adult. Iris hazel; bill black; legs and feet purplish red.

78. *TURTUR AMBIGUUS* Boc.

By the kindness of Mr. Hartert, who obtained the loan of the type of this species from Prof. Barboza du Bocage in Lisbon, I have been able to compare my specimens and others with it.

My four examples and those from Khartum in the Brehm collection (now at Tring) have the wings a little longer, and the white tips to the rectrices considerably wider, than those of the type.

It is curious that all the specimens in the British Museum (viz. two from Tette on the Zambesi, one from the Sobat, and one from the Blue Nile) agree with the type from Benguela so far as the white tips to the rectrices are concerned. Their wings vary slightly in length, but this is entirely due, I consider, to abrasion.

Exceedingly abundant, except within 20 miles of Khartum, where it became rarer. This species and the next, with which it consorts, formed one of our staple dishes. In the south of our route they were so common and tame, and clustered so thickly on certain trees, that on several occasions we killed 14 and 16 at a "family" shot, while 5 or 6 was no unusual return for a single cartridge. All the Pigeons we observed were great drinkers, and flock after flock used to rush down to the river regularly morning and evening. Returning from it in the evening, they often rose to a great height, and circling round, suddenly plunged down headlong, like our Wood-Pigeons, into the trees used as roosting-places. The ground under their perches is often white with droppings.

Pigeons were a great nuisance to us while collecting, as almost every tree contained them, and their sudden noisy exit when we approached often disturbed rarer game. The note of this species is generally prefaced by a harsh "cowoo," a vulgar drawn-out sound, followed by a soft and pleasing "hoo," repeated an indefinite number of times.

On April 24th, near Shebesha, I found a bird of this species sitting on two incubated eggs in a nest made of some 20 sticks, placed low down in a cactus plant growing upon a small acacia. It was the only nest of this species seen.

Adult. Iris dark yellow; bill black; legs and feet purplish red.

79. TURTUR ROSEOGRISEUS (Sundev.).

This species was perhaps not quite so abundant as the preceding. Its light colour and smaller size make it very easy to distinguish. In habits it is very similar to *T. ambiguus*.

Adult. Iris bright red; bill black; legs and feet purplish red.

80. TURTUR SENEGALENSIS (Linn.).

Also very common, but not so numerous as the preceding species. We did not observe it north of Jebel Auli.

Young birds only just able to fly were obtained on several occasions, but no nests were found.

Adult. Iris hazel; bill black; legs and feet purplish.

81. CHALCOPELIA AFRA (Linn.).

A single bird shot at our most southern camp on March 30th was the only specimen observed.

Adult. Iris dark brown; bill, legs, and feet black.

82. CENA CAPENSIS (Linn.).

This species was, without doubt, the most evenly distributed of any. It was everywhere common from Kawa to Khartum. It is more often found on the ground and in low bushes than in trees. The shrubs near the river were often full of these birds, sitting in rows doing nothing.

They have a straight quick flight. On April 22nd I found a nest of this species at the edge of a thick bush about 5 feet from the ground. The fabric, slenderly made of a few sticks, was round in shape and about $3\frac{1}{2}$ inches in diameter. It contained two eggs of a light-brown colour.

Another nest, placed on the stump of a small tree about 3 feet from the ground, contained eggs on May 2nd. These hatched the next day, and on May 5th the young were lightly covered with whitish down. I spent a long time trying to photograph the old bird on this nest. Although my camera was only some four yards away from it, the hen bird visited her young twice in about an hour. She was very tame, and looked very pretty while settling on her progeny, and I hoped that I had obtained good portraits of her; but unfortunately these, and, indeed, all my negatives, are failures, owing to an irremediable "fogging" caused by the heat.

Adult. Iris dark brown; bill—of ♂ purple at base, bright yellow at tip, of ♀ dark brown; legs and feet purplish red.

83. *STRIX FLAMMEA* Linn.

Strix flammea maculata Brehm, Naum. 1855, p. 270.

My specimen agrees with those at Tring collected by Brehm and labelled "Khartum." They are rather dark on the back and a good deal spotted on the breast.

The only specimen we observed lived in a small tunnel in the face of a cliff on Jebel Auli. This had the appearance of a nesting-place, but the hole contained only a large number of pellets, and the bird we shot proved to be solitary.

Adult. Iris dark hazel; bill white; claws blue-black.

84. *SCOPS LEUCOTIS* (Temm.).

This beautiful little Owl was first observed some ten miles north of Jebel Auli.

We were camped at mid-day when on the march, and while searching through a small patch of dense wood, an apparent swelling on the trunk of a thick tree attracted my attention. I looked carefully at it, and had just come to the conclusion

that it was only a bough broken off short, when I thought I saw two ears. Still I could not make out the form of a bird. I went back for my companions, and we all examined the "lump" with our glasses, but so thick was the tree, and so exactly did the outline resemble a stump, that it was some time before we decided that it was an Owl. We fired at it, and down fell two Owls, while another flew out of the tree. We obtained two others at Wad Mariun.

Adult. Iris bright orange; bill greenish white; claws light brown.

85. *BUBO LACTEUS* (Temm.).

One bird obtained a little north of Duem was the only specimen seen.

Adult. Iris dark brown; eyelids pale yellowish blue; bill milky white, becoming bluish at the base.

86. *FALCO TANYPTERUS* Sehl.

Fairly frequent from Duem southwards, but not often seen north of that place. We witnessed an interesting chase near Shebesha. When we were riding along by the river, a small bird dashed over our heads at a terrific pace. Two Falcons, presumably of this species, came rushing through the air side by side about 20 yards behind it. They had not gone 50 yards beyond us, when one of them gave a slight downward swoop and then flew slowly on, while the other checked his flight, turned round, and flew away in the direction from which both had come. We thought that they had given up the chase, as, although the quarry had disappeared, it seemed impossible from the pace at which it was flying that the Falcons could have overtaken it in so short a distance and with so little effort. However, the first bird soon alighted on the ground, and then we saw that it had indeed captured its prey. What species it was we could not discover, as the Falcon kept a respectful distance and could not be induced to surrender the quarry.

Adult. Iris dark brown; bill yellowish white at base, black at tip; cere greenish yellow; legs and feet lemon-yellow.

87. **MILVUS ÆGYPTIUS* (Gm.).

Fairly common and very bold. It would often swoop down into the middle of the camp and carry off some tit-bit. A good many frequent the town of Omdurman.

88. **HALIAËTUS VOCIFER* (Daud.).

This fine Eagle was frequently met with, either perched in some tree near the river, or sitting on a bed of "oysters" (*Ætheria*). It struck me as a very inactive bird, and its white "hood" always made it conspicuous.

The body of one which we shot was cooked and eaten with considerable relish by our men two hours after the bird had been killed.

Adult. Iris granulated brown; bill pale yellow at base, horn-colour at tip; cere and orbits very pale yellow; legs and feet white.

89. **HELOTARSUS ECAUDATUS* (Daud.).

This striking bird was only occasionally seen. Although much more shy than the preceding species, on one occasion it allowed us to approach within 30 yards of the tree in which it was sitting. The brilliant crimson bill and feet make a striking contrast to the dark plumage. When flying overhead, the light grey under the wings has a well-defined outline, even at a considerable distance.

90. *MELIERAX POLYZONUS* (Rüpp.).

Fairly common. I once saw it sitting sleepily in an acacia within a few feet of a Little Bittern. It has a loud squealing note.

Adult. Iris dark brown; bill and cere pale vermilion-red, with tips of both mandibles black; legs and feet vermilion-red.

91. *CIRCUS MACRURUS* (Gm.).

Not numerous.

Adult. Iris pale golden colour; bill black; legs and feet bright yellow.

92. **GYPS RUEPELLI* (Brehm).

We did not shoot any Vultures, but we saw here and there

parties of three to six birds which looked exactly like *Gyps fulvus*, but were probably young examples of this species.

93. *NEOPHRON PERCNOPTERUS (Linn.).

Fairly common and well distributed, but nowhere seen in large numbers. There were a good many in Omdurman.

94. IBIS ÆTHIOPICA (Lath.).

Fairly common on the whole, the Sacred Ibis was distributed in pairs or small parties of five or six here and there to within a few miles of Khartum. They were very tame, allowing us to approach within 20 yards of them as they strutted about on the short grass by the river. When flying away, the bird looks very white, the wings being but narrowly margined with black, while the black scapulars, drooping and conspicuous when the bird is stationary, are scarcely noticed in the former case. Seen from underneath or when flying towards the observer, the lines of bare skin on the underside of the wings are striking, and have the appearance of blood-stains.

Adult. Iris dark marble-brown; bill, head, neck, legs, and feet jet-black; bare skin under the wings bright vermilion.

95. *PLEGADIS FALCINELLUS (Linn.).

Distributed along the river in small numbers, but sometimes in considerable flocks on the "oyster-beds."

96. *HAGEDASHIA HAGEDASH (Lath.).

Uncommon and generally solitary, but sometimes consorting with the preceding species, from which it can only be distinguished, at a distance, by its much larger size.

97. *PLATALEA ALBA Scop.

Fairly common in small flocks wading about the edge of the river. We saw no black-legged Spoonbills.

98. HERODIAS RALLOIDES (Scop.).

The Squacco Heron was distributed in small numbers along the river. Either the birds were single, or two or three were together, but they were never in sufficient numbers to form a flock.

99. *HERODIAS BUBULCUS* (Aud.).

This Heron was more uncommon than the preceding. We observed a few single birds by the river's edge, but never near cattle.

Adult. Iris bright yellow; bill pinkish yellow; legs and feet yellowish flesh-colour.

100. **HERODIAS ALBA* (Linn.).

We observed examples of this species only on one occasion, near Gerazi on April 28th.

101. **HERODIAS GARZETTA* (Linn.).

A few seen here and there.

102. **ARDEA CINEREA* Linn.103. **ARDEA PURPUREA* Linn.

These Herons were seen from time to time in fair numbers.

104. *ARDETTA MINUTA* (Linn.).

Little Bitterns were on many occasions seen feeding at the edge of the river during the day-time. In two or three places small flocks of these birds were observed perched high up in the acacia trees. When we approached they flew up and circled in the air, calling loudly for some time before settling again. We often came across single individuals in the trees, but these generally stretched up their heads and extended their bodies, and so remained immovable in fancied security. Once I fired over 20 shots at Pigeons from one spot, while in an acacia 30 yards away a Little Bittern was perched in this position and never moved in the slightest.

The note, which we only heard when the bird was on the wing, is a low-toned short "quer," jerkily uttered. This note is sometimes prefaced by a higher-pitched but also short "quec."

105. **CICONIA ALBA* Bechst.

White Storks were common on our way up the river. I have no record of them on our return.

106. **CICONIA NIGRA* (Linn.).

A few seen. The last of which I have a note was one shot on May 11th near Jebel Auli.

107. *ANASTOMUS LAMELLIGERUS Temm.

These conspicuous birds were to be seen all along the river to within a few miles of Khartum. They were generally single and wild, but wherever there was an "oyster-bed" a fair number of them might be seen gathered together. The whitish colour of the basal portion of the bill is often visible at a considerable distance.

108. *LEPTOPTILUS CRUMENIFERUS (Cuv.).

These revolting-looking birds were fairly common in small companies from Kawa to within a few miles of Khartum. They were always to be found on the "oyster-beds," and were very tame.

109. *PSEUDOTANTALUS IBIS (Linn.).

Fairly common.

110. *PHALACROCORAX AFRICANUS (Gm.).

Cormorants, presumed to be of this species, were often seen either flying low over the river or sitting on some snag or "oyster-bed."

111. *PELECANUS ONOCROTALUS Linn.

Pelicans were seen at many points from Khartum southwards, either sitting huddled up on some sandbank or skimming over the water. We saw several large flocks. Two of these, each composed of some 1000 birds, I approached until I was within 70 yards. They were standing in the shallow water at the river's edge. Some were engaged in pruning their rosy-white plumage, some in washing their yellow pouches, while others were sleeping.

I watched them a long time with my binoculars, and then tried to creep up closer, but they gradually edged away until the water floated them off, and then, when I approached still nearer, they all rose at once. For so large and heavy a bird their flight struck me as peculiarly graceful. After a few rapid powerful flaps the wings are outstretched, and the bird skims swiftly along within a foot of the water for some hundred yards in a straight line, then curving slightly upwards, it flaps its wings again and takes another long floating flight.

112. *HYDROCHELIDON LEUCOPTERA* (Schinz).

This beautiful species was especially numerous near Khartum in May. A great number were then frequenting the river. We often saw them flying over the land in company with *Glareola pratincola*. While the Pratincoles caught insects in the air, the Terns were hovering over the beans and grass, or darting down to pick some insect off the ground.

Adult. Iris dark brown; bill black; legs and feet dark crimson.

113. **HYDROCHELIDON HYBRIDA* (Pall.).114. **HYDROCHELIDON NIGRA* (Linn.).

Both these Terns were frequently seen flying and hovering about the river. Of the two the Whiskered Tern was the commoner.

115. *STERNA ANGLICA* Mont.

A Gull-billed Tern was one of the first birds observed as we were crossing the river on our arrival at Omdurman. We saw individuals fairly frequently afterwards and shot one during our last day in camp.

116. **LARUS FUSCUS* Linn.

We saw small flocks of Black-backed Gulls, which had every appearance of being of this species, flying down the river northwards on March 7th and on April 28th.

117. **PHŒNICOPTERUS ROSEUS* Pall.

Only a few seen here and there on sandbanks in the river.

118. **CHENALOPEX ÆGYPTIACA* (Briss.).

Everywhere common. Although generally in flocks of varying numbers, by the end of April some were mated and the males were courting industriously. We several times saw pairs that seemed to be breeding, but we never found a nest. Although these Geese are shy, probably because everyone shoots at them, the natives have considerable difficulty in driving them from their beans, of which the birds are very fond. They seem to know the difference between an armed and an unarmed man.

119. *PLECTROPTERUS RUEPELLI Sclat.

Spur-winged Geese were met with in fair numbers all along the river. They were still more shy than the Egyptian Geese, and were very difficult to shoot. We never saw a large flock, and often two or three were in company with a flock of *Chenalopez aegyptiaca*.

120. *DAFILA ACUTA (Linn.).

A small flock seen near Duem on March 26th.

121. *DENDROCYNNA VIDUATA (Linn.).

We did not notice this Duck until towards the end of April. From Shebesha, where we arrived on our way down the river on April 23rd, to Khartum it was common in small flocks at the edge of the river. It is very good for food.

122. PTEROCLURUS EXUSTUS (Temm.).

Mr. Hartert has separated (Nov. Zool. vol. vii. p. 28, March 1900) the true North-eastern and Central African *P. exustus*, which is always strongly marked with dark olive-brown on the back, from the Somaliland bird, which, besides being smaller, is of a pale sandy colour on the back. This form Mr. Hartert calls *Pterocles exustus somalicus*, and my bird from the White Nile exactly agrees with it. Thus the Sand-Grouse of the portion of the White Nile district extending from Khartum to 160 miles south, instead of agreeing with the birds to the north and to the south of it, is of the same form as is to be found far to the eastward.

These Sand-Grouse were met with everywhere in astonishing numbers. Their flights from the desert to the river each morning at certain spots were exceedingly regular. So large were the flocks in certain places, that the incessant stream of small parties rushing down to the water lasted for over an hour. On several broad grassy flats near the river a large number of Sand-Grouse were to be found all day, and they seemed to live and feed there in preference to the arid tracts. But at these spots there were always other individuals, which came down from the desert in the usual way to drink in the morning, and flew back again at once, and others again which

came from the desert and after their drink settled down upon the grassy flat. We saw no signs of Sand-Grouse nesting during our stay, but on May 13th, about three miles from the river, I saw a pair of this species accompanied by a bird which, though I may have been mistaken, I took for a young one. It was only about half the size of the others, but flew not less strongly and seemed fully feathered. Unfortunately I was unable to get near enough to shoot it.

123. *PTEROCLURUS SENEGALLUS* (Linn.).

This species, easily distinguished, even at a considerable distance, by its larger size, was rare in comparison with *P. exustus*, but it was well distributed in small numbers from Kawa to Khartum.

124. **NUMIDA PTILORHYNCHA* Licht.

Guinea-fowl, presumably of this species, were common about Kawa. Unfortunately I was ill at this camp, and my collectors did not obtain a specimen.

125. *EUPODOTIS ARABS* (Linn.).

Only one Bustard was observed, near Duem on March 21st. This bird was squatting on its "haunches" at the river's edge to drink, and I shot it with a rifle at a distance of about 100 yards as it ran away. It made no attempt to fly, although I missed it the first time. Its wings were in perfect plumage.

126. *BALEARICA PAVONINA* (Linn.).

Crowned Cranes were by no means common, but a few were seen here and there feeding on the land near the river. They were very tame, and often allowed us to approach to within 20 yards of them. At one of our camps, not far from Khartum, a single bird used to come regularly every evening at sunset to roost on the top of a small acacia, which it would leave just as regularly as soon as it got light in the morning.

Adult. Iris white; bill, legs, and feet black; bare patches on the sides of the head very pale bluish white; pouch reddish.

127. *GRUS CINEREA Bechst.

A fair number of Cranes were seen, but they were always too wild to shoot.

128. HOPLOPTERUS SPINOSUS (Linn.).

Fairly common and well distributed along the river-bank.

Adult. Iris crimson; bill, legs, and feet black.

129. OCHODROMUS ASIATICUS (Pall.).

Only observed at Kawa, where it was common.

Adult. Iris dark brown; bill black; legs and feet dark grey.

130. *ÆGIALITIS HIATICULA (Linn.).

Fairly common along the river. The last bird seen—apparently of this species—was on May 14th.

131. *TRINGA ALPINA Linn.

A few seen by the river, the latest date noted being May 9th.

132. *TRINGA MINUTA Leisler.

A good many seen from March 24th to May 9th.

133. MACHETES PUGNAX (Linn.).

A fair number observed. Latest date May 3rd.

134. *LIMOSA BELGICA (Gm.).

Fairly common. Latest date May 9th.

135. *TOTANUS CALIDRIS (Linn.).

A few seen. Latest date May 14th.

136. *NUMENIUS ARQUATA (Linn.).

Not common.

137. *HIMANTOPUS CANDIDUS Bonn.

Fairly common.

138. ŒDICNEMUS SENEGALENSIS Swains.

I saw a pair of these birds just outside Khartum, and we observed a few here and there up the river. They were always in pairs, never flew far, and evidently considered themselves safe when lying flat on the ground.

Adult. Iris pale greenish yellow; bill greenish yellow at base, black at tip; legs and feet greenish yellow.

139. *PLUVIANUS ÆGYPTIUS* (Linn.).

These beautiful birds were common along the river-bank. They were in pairs and were very noisy when disturbed. Von Heuglin considered that this species bred in the Soudan after the rainy season, but those which we shot were evidently doing so, one female having a fully formed egg in the oviduct. We never saw them near the crocodiles!

140. **CURSORIUS GALLICUS* Gm.

These birds were fairly common along the river-bank in small parties of from four to eight.

141. **GLAREOLA PRATINCOLA* (Linn.).

Between Khartum and 30 miles to the south of it several flocks of Pratincoles were seen during the first fortnight in May.

XXIII.—*On the Birds collected by Mr. J. J. Harrison between Zeila and Lakes Rudolf and Baringo, Eastern Africa.* By W. R. OGILVIE GRANT. *With an Introduction by J. J. HARRISON.*

(Plate VII.)

[ON November 5th, 1899, Mr. A. E. Butter, Mr. P. H. Powell-Cotton, Mr. W. F. Whitehouse, and I landed at Aden *en route* for Zeila on the Somali coast. Our hope was to combine sport and survey-work, and if possible to make our way south-westwards by Lake Rudolf to the White Nile and thence to Khartum. We had with us Mr. Donald Clarke, a first-rate practical surveyor, and Mr. Perks as taxidermist. Though my friends were mainly occupied with the pursuit of big game, my thanks are due to them for bringing into camp various birds to add to the collection in which I was interested. While at Zeila I procured, among other birds, a Nightjar (*Caprimulgus unwinii*)—a pale Asiatic form which had not been previously met with in Africa. On leaving the coast, our caravan consisted of about 80 camels and 63 Somalis picked from four different tribes, all under a splendid head-man, Mohamed Hassen.

Directly we started we found out what a terribly hard task lay before us. Two years of unprecedented drought had